acquiring a first surface from a body to be imaged, said first surface having a curvature;

acquiring a second surface from said body;

determining a first curvature of said first surface, wherein the step of determining a first curvature comprises determining a mean curvature,
wherein, in a Cartesian coordinate system, said mean curvature is represented as

$K_m=(k_{xx}+k_{yy})/2$,

where $k_{xx}=[n_x (x+a, y, z) - n_x (x=a, y, z)] /2a$; and

$k_{yy}=[n_y (x, y+b, z) - n_y (x, y-b, z)] /2b$, and where n_x and n_y represent vectors in the x and y directions, respectively, when the direction normal to each of said first and second curvatures is in the z direction, and a, b, and c are the spacings between sampled points;

determining a second curvature of said second surface;

shading said first surface in response to said first curvature;

shading said second surface in response to said second curvature; and

varying orientation of at least one of said first surface and said second surface to align said first surface and said second surface in registration with each other.

~~5.~~ (Amended) A method for registering surfaces comprising:

acquiring a first surface from a body to be imaged, said first surface having a curvature;

acquiring a second surface from said body;

determining a first curvature of said first surface, wherein the step of determining a first curvature comprises determining a Gaussian curvature, wherein said Gaussian curvature is represented as:

$K_g = k_{xx}k_{yy}-k_{xy}k_{yx}$,

where $k_{xx} =[n_x (x+a, y, z) - n_x (x-a, y, z)] /2a$;

k_{yy} =[n_y (x, y+b, z) - n_y (x, y-b, z)] /2b;

k_{xy} =[n_x (x, y+b, z) - n_x (x, y-b, z)] /2b; and

k_{yx} = [n_y (x+a, y, z) - n_y (x-a, y, z)] /2a, and wherein n_x and n_y represent vectors in the x and y directions, respectively, when the direction normal to each of said first and second curvatures is in the z direction, and a, b, and c are the spacing between sampled points;

determining a second curvature of said second surface;

shading said first surface in response to said first curvature;

shading said second surface in response to said second curvature; and

varying orientation of at least one of said first surface and said second surface to align said first surface and said second surface in registration with each other.

6. (Amended) The method for registering surfaces of claim 1 wherein the step of determining a second curvature includes the step of processing said second surface with marching cubes.

7. (Amended) The method for registering surfaces of claim 1 wherein said first surface represents a patient and is generated from patient range data.

8. (Amended) The method for registering surfaces of claim 1 wherein said second surface represents a patient and is generated from image data.

12. (Amended) A storage medium encoded with machine-readable computer program code for registering surfaces comprising instructions for causing a computer to implement a method of:

acquiring a first surface from a body to be imaged, said first surface having a mean curvature wherein, in a Cartesian coordinate system, said mean curvature is represented as

$K_m=(k_{xx}+K_{yy})$ /2

where k_{xx} =[n_x (x+a, y, z) - n_x (x-a, y, z)] /2a, and;

k_{yy} =[n_y (x, y+b, z) - n_y (x, y-b, z)] /2b, and wherein n_x and n_y represent vectors in the x and y directions, respectively, where the direction normal to each of said first and second curvatures is in the z direction, and a, b, and c are the spacing between samples points;

acquiring a second surface from said body;

determining a first curvature of said first surface;

determining a second curvature of said second surface;

shading said first surface in response to said first curvature;

shading said second surface in response to said second curvature; and

varying orientation of at least one of said first surface and said second surface so as to align said first and second surface in registration with each other.

124. (Amended) A storage medium encoded with machine-readable computer program code for registering surfaces comprising instructions for causing a computer to implement a method of:

acquiring a first surface from a body to be imaged, said first surface having a Gaussian curvature, wherein said Gaussian curvature is represented as

$K_g = k_{xx}k_{yy} - k_{xy}k_{yx}$,

where k_{xx} =[n_x (x+a, y, z) - n_x (x-a, y, z)] /2a;

k_{yy} =[n_y (x, y+b, z) - n_y (x, y-b, z)] /2b;

k_{xy} =[n_x (x, y+b, z) - n_x (x, y-b, z)] /2b; and

k_{yx} = [n_y (x+a, y, z) - n_y (x-a, y, z)] /2a, and wherein n_x and n_y represent vectors in the x and y directions, respectively, when the direction normal to each of said first and second curvatures is in the z direction, and a, b, and c are spacings between sampled points;

acquiring a second surface from said body;

determining a first curvature of said first surface,

determining a second curvature of said second surface;

shading said first surface in response to said first curvature;

shading said second surface in response to said second curvature; and